Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Carriage of the Transmissions	)	CS Docket No. 98-120
of Digital Television Broadcast Stations	)	
	)	
Amendment of Part 76	)	
of the Commission's Rules	)	

COMMENTS OF CIRCUIT CITY STORES, INC.

October 13, 1998

Table of Contents

Summary i

I. **Efficient Delivery Of Both Analog And Digital Versions Of DTV Broadcasts Is Imperative** 3

II. **Customers Must Become Exposed To The Full Benefits Of Digital Television If They Are To Become True Believers In And Consumers Of DTV** 6

III. **The Commission Must Adopt Rules That Support The Use Of Competitively Available Consumer Equipment For In-Home Conversion Of Digital Television Signals** 7

IV. **Digital Television Broadcast Signals Must Be Carried On A Cable System's Basic Service Tier** 11

V. **The Unaltered Carriage Of Broadcast Digital Television Signals By Cable System Operators Will Not Cause The Cable Industry To Bear A Disproportionate Share Of The Responsibilities Associated With The Introduction Of Digital Television** 13

VI. **Conclusion** 18

Summary

Digital television will expand the variety of television services available to consumers. However, the benefits that digital television has the potential to offer will only be realized if DTV achieves broad acceptance. Because a significant portion of the American public receives broadcast programming through a cable system operator, it is clear that the Commission must take steps to ensure that consumers that subscribe to cable services are able to receive such signals without having to overcome unnecessary financial or technological barriers.

Circuit City believes that the keys to the "must carry" issues under consideration in this proceeding are the speed, nature, and consumer acceptance of the transition to digital broadcasting that, according to law and FCC regulation, should occur by 2006. If this transition occurs (a) on time to meet requirements for return of spectrum, (b) in a way that engages, rather than inconveniences, consumers, and (c) efficiently in terms of availability, capability and cost of consumer devices, it will be a success. These goals are, indeed, achievable. The "must carry" decisions adopted as a result of this proceeding can play a role, but will be only one factor in the fulfillment of these goals. Success will depend on the Commission, and the Congress, successfully weaving together a variety of regulatory proceedings and legislative issues.

First, cable system operators must deliver all broadcast HDTV programming to consumers. Return of present analog spectrum by 2006 is a clear congressional priority and a national goal. In order to achieve this goal, cable system operators must take steps now that will enable them to carry both analog and digital versions of DTV broadcasts by 2006. Between those customers already receiving DTV broadcasts digitally and converting them through home converters, and those customers receiving DTV broadcast signals converted by the cable

operator, it should be possible in 2006 to count *all cable customers* as those capable of viewing converted DTV signals. Consequently, spectrum recovery is a much less daunting prospect and should be easily achievable. For this spectrum recovery solution to work, however, the cable operators must actually receive and process all local DTV signals. This suggests that, *at least by 2006*, it should be an important national goal for cable operators to carry such DTV broadcast signals, one way or another.

In addition, cable system operators must preserve original HDTV resolution for those consumers who have acquired high-resolution displays. The massive national investment in DTV will be worthwhile only if consumers have the opportunity to experience the potential improvements in detail and resolution that digital television offers. Given the likely reliance of customers on MVPDs for receipt of DTV broadcasts, it is imperative that these broadcasts be available to consumers contemplating the purchase of DTV-capable devices in the full detail and resolution with which they were broadcast. In addition, Navigation Devices, whether supplied by cable MSOs or unaffiliated vendors must support the resolution of the DTV signal as received, and must convert that signal to high definition (RGB or other component) and NTSC-quality composite analog display.

The Commission must also adopt rules that ensure the competitive availability of in-home conversion devices for digital broadcast and wired services. As between analog conversion of DTV broadcasts before or after transmission to the home, only conversion after transmission can support the detail, clarity and viewing angles offered by DTV formats. Thus, in aid of the DTV transition, the Commission ought to encourage the broadest and most competitive market for in-home conversion of DTV signals. The rapid implementation of the Commission's Navigation Device rules will support this goal. The Commission must also continue to

encourage the private sector to resolve other broadband interface and copy protection issues that are critical to the successful deployment of DTV.

Moreover, Circuit City believes that it is imperative that a broadcaster's digital signal is delivered on the basic service tier of any cable system. This will ensure that consumers are not required to overcome the impediment of having to subscribe to additional services in order to receive digital television.

Finally, the Commission must scrutinize the basis for claims that cable system operators will be unable to deliver the full benefits of digital television without also having to drop other programming or expend inordinate sums of money. Manufacturers, broadcasters and other entities have made significant investments in digital television in order to bring to the public the benefits of this promising technology. The cable industry must not be allowed to stop DTV introduction based on concerns that can be resolved.

If the FCC takes into account that most consumers rely on cable operators to process and deliver broadcast signals, the analog terrestrial broadcast spectrum can be returned for auction by 2006. This elevates the responsibilities of cable operators with respect to DTV signals.

Consumers should have access to DTV signals using competitively available equipment. The quality of such signals should not be altered by intermediaries in the delivery chain and Navigation Devices should make such signals available via both composite and component analog interfaces. In order for all consumers of cable service to be able to enjoy the benefits of digital television, the Commission should adopt DTV must carry rules that ensure that all DTV broadcast signals are carried in the format delivered by the broadcaster, are carried on the basic service tier at no additional charge to cable subscribers, and can be accessed without the need for purchasing or leasing specialized equipment or services from the cable system operator.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Carriage of the Transmissions	)	CS Docket No. 98-120
of Digital Television Broadcast Stations	)	
	)	
Amendment of Part 76	)	
of the Commission's Rules	)	

COMMENTS OF CIRCUIT CITY STORES, INC.

Pursuant to § 1.415[1] of the rules of the Federal Communications Commission ("Commission" or "FCC"), Circuit City Stores, Inc. ("Circuit City"), by its attorneys, respectfully submits its Comments in response to the Notice of Proposed Rulemaking in the above-mentioned proceeding.[2]

Circuit City is the largest retailer of branded consumer electronics in the United States. Circuit City sells consumer electronics products such as TV's, VCRs, digital video disk players, direct broadcast satellite ("DBS") and audio systems, and personal computers and related software and accessories. Many of the products that Circuit City currently sells and intends to sell in the future are aimed at allowing consumers to take full advantage of the burgeoning digital services market.

---

1 47 C.F.R. § 1.415.

2 *In the Matter of Carriage of the Transmissions of Digital Television Broadcast Stations, Amendment of Part 76 of the Commission's Rules*, CS Docket No. 98-120, *Notice of Proposed Rule Making* (Released July 10, 1998) (the "*Notice*").

As the Commission itself has stated, digital technology will expand the realm of services available to consumers and digital television has the potential to serve as a critical breakthrough for ensuring that free television continues to be a viable competitor to other growing digital services.[3] The Commission also has noted that the overall benefits that television has offered the American public for the last 50 years – free, universally available, local broadcast television – will only continue if DTV achieves broad acceptance.[4] Because a significant portion of the overall population currently receives broadcast services through a cable system operator, consumers who rely on cable services for this purpose must be able to receive such signals without having to overcome artificial, cable-imposed financial or technological barriers.

Circuit City believes that the keys to the "must carry" issues under consideration in this proceeding are the speed, nature, and consumer acceptance of the transition to digital broadcasting that, according to law and FCC regulation, should occur by 2006.[5] If this transition occurs (a) on time to meet requirements for return of spectrum, (b) in a way that engages, rather than inconveniences, consumers, and (c) efficiently in terms of availability, capability and cost of consumer devices, it will be a success.

These goals are, indeed, achievable. The "must carry" decisions adopted as a result of this proceeding can play a role, but will be only one factor in the fulfillment of these goals.

---

3 *See, e.g., In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, MM Docket No. 87-268, *Fifth Report and Order*, 12 FCC Rcd 12809, ¶ 1-7 (Released Apr. 21, 1997) (*DTV 5th R&O*); *See also Remarks of William E. Kennard, Chairman, Federal Communications Commission, The International Radio and Television Society*, New York, NY, Sept. 15, 1998; *Remarks of Commissioner Susan Ness Before the California Broadcasters Association; Digital Pioneers: Embracing the Challenge*, Monterey, CA, July 27, 1998.

4 *DTV 5th R&O* ¶ 5.

5 47 U.S.C. § 309(j)(14); *DTV 5th R&O* ¶ 76-93, 99-100 (demonstrating that the Commission espouses similar beliefs).

Success will depend on the Commission, and the Congress, successfully weaving together a variety of regulatory proceedings and legislative issues including:

- efficient delivery of broadcast DTV programming to consumers by *both* analog and digital cable services;
- preservation of original DTV resolution for those consumers who have acquired high-resolution displays; and
- competitive availability of in-home conversion devices for digital broadcast and wired services.

I. Efficient Delivery Of Both Analog And Digital Versions Of DTV Broadcasts Is Imperative

Return of present analog spectrum by 2006 is a clear congressional priority and a national goal.[6] Achieving this goal will depend in part on preparation by cable TV system operators that will enable them to carry both analog and digital versions of DTV broadcasts by 2006.

The law provides that the spectrum now used for analog television broadcasts must be returned by 2006 unless, in a broadcast market, 15% or more of the customers do not have access to the broadcast DTV signal – either through display on new receivers able to tune and process the new digital broadcast channels, or through conversion of the DTV signals for viewing on new or existing analog displays.[7] Such conversion could take place before and after transmission to the home:

- through customer premises devices converting to an analog format digital signals received in the home by broadcast or wire, or
- through conversion to analog format, prior to transmission to the home, by a cable or other wired service provider.

---

6 *DTV 5th R&O* ¶ 6, 83.

7 47 U.S.C. § 309(j)(14).

While manufacturers and retailers would like to be able to sell new DTV receivers to all households by 2006, new product and format introductions do not work this way. Initial sales tend to be relatively modest, and build as (1) consumers come to appreciate and desire the attributes of the new products, and (2) scale and component economies in successive generation models lead to lower prices.[8] So sales of DTV receivers alone, no matter how brisk, will not accomplish the return of spectrum by 2006.

Most discussion of spectrum recapture, therefore, has rightly focused on the ability of the market to supply, competitively and cheaply, devices that provide the necessary digital-to-analog conversion function. Manufacturers may initially design such devices only for conversion of digital broadcasts; others devices may initially be designed only to convert digital signals sent to the home by Multichannel Video Program Distributors ("MVPDs"). However, when the conversion function can be offered efficiently and competitively in a variety of consumer electronic and computer products, it can be supplied to consumers much more readily and cheaply. If such devices help to engage the public in wanting to receive the benefits of new HDTV and DTV broadcasts, they will contribute enormously to the transition.

The final factor in the return of spectrum by 2006 will be the ability of wired MVPDs to provide converted DTV signals to those customers who have not yet acquired DTV receivers or customer premises products that convert DTV signals to analog. Simple

---

[8] *See, e.g.*, Bruce Mohl, *HDTVs Draw the Curious to Somerville; Consumers Marvel at High Quality, Cost*, Boston Globe, Oct. 7, 1998, at B1 (discussing projections for future DTV equipment prices and programming); Research Developments, Computer Retail Week, Sept. 21, 1998 (noting DTV equipment sales projections and consumer demographics); Roger Harris, *Store Offers Preview of Next Generation TV Digital: High Definition Television Touted as Greatest Advance Since Color*, Ventura County Star, at E1 (discussing DTV equipment prices and demand); *See also Panasonic Finalizes Digital Television Plans; Wows New York with Region's First Public Demonstration of Live HDTV Broadcast*, PR Newswire, Oct. 8, 1998 (announcing DTV products and prices).

mathematics indicate that, at least in theory, these services alone could provide most of the "conversion" necessary to satisfy the return of spectrum provision. On average, two-thirds of the customers in any area receive broadcast television over cable.[9] A cable operator receiving at its headend the DTV signals of all local broadcasters, on January 1, 2006, can convert these DTV signals to analog prior to transmission. It can then switch its analog feed from the existing analog spectrum broadcast signals to the new DTV broadcast signals. In the same bandwidth devoted now to carrying existing analog broadcast signals, the operator thus can furnish the converted DTV signals to those customers still needing them. These customers will have no need for the existing analog spectrum.

Between those customers already receiving DTV broadcasts digitally and converting them through home converters, and those customers receiving DTV broadcast signals converted by the cable operator, it should be possible in 2006 to count *all cable customers* as those capable of viewing converted DTV signals. Recognition of this fact should make the mathematics of spectrum recovery much less daunting. For this spectrum recovery solution to work, however, the cable operators must actually receive and process all local DTV signals. This suggests that, *at least by 2006*, it should be an important national goal for cable operators to carry such DTV broadcast signals, one way or another.

---

[9] At the end of June 1997, the number of homes subscribing to cable service was 66.2% of television households, with cable penetration reaching 68.2% for the same period. *In the Matter of Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, CS Docket No. 97-141, *Fourth Annual Report*, 13 FCC Rcd 1034, ¶ 15 (Released Jan. 13, 1998); *DTV Must-Carry Debate Continues in Congressional Hearings*, Communications Daily, Apr. 24, 1998 (noting comments of several parties that cable carriage of digital signals is critical to success of DTV).

II. Customers Must Become Exposed To The Full Benefits Of Digital Television If They Are To Become True Believers In And Consumers Of DTV

The transition to DTV would hardly be worth the investment if *all* that occurred were for cable operators to change the technical means by which broadcast signals are acquired. The subscriber would see little or no difference in presentation or picture quality. In Circuit City's view, the massive national investment in DTV will be worthwhile only if consumers have the opportunity to experience the potential improvements in detail and resolution that DTV in general, and HDTV in particular, offer. This means presentation of signals in full HDTV resolution.

Given the likely reliance of customers on MVPDs for receipt of DTV broadcasts (as well as other original programming), it is imperative that these broadcasts be available to consumers contemplating the purchase of DTV-capable devices in the full detail and resolution with which they were broadcast. Circuit City is confident that cable operators, who face incremental competition from satellite operators and, where feasible, from broadcasters themselves, will support the transition to digital signal delivery rather than rely on converting DTV signals to analog prior to transmission. However, as most consumers now rely on cable to receive their broadcast signals as well, these operators will have the power to determine whether any broadcaster's choice of formats and resolutions ever reaches most of its potential viewers. Accordingly, it is vital that, in the transition to digital carriage of DTV signals, *cable systems operate as conduits, not filters*.

Therefore, Circuit City believes that an important part of the Commission's regulations with respect to DTV "must carry" ought to be to require that (1) cable operators,

in the carriage of DTV broadcasts, must preserve their original format and resolution, and (2) Navigation Devices governed by CS Docket 97-80, whether supplied by cable MSOs or others through reliance on an MSO-provided "POD," must support the resolution of the DTV signal as received, and must convert that signal to high definition (RGB or other component) and NTSC-quality composite analog display.

The Commission already, under CS Docket 97-80, has stated its reliance on the OpenCable project to take steps necessary to assure the competitive availability of Navigation Devices.[10] For this purpose, it has established oversight of the OpenCable process. The OpenCable specifications, which will be employed in MSO devices and licensed to manufacturers intending to sell devices using the POD interface, easily can incorporate such requirements.

III. The Commission Must Adopt Rules That Support The Use Of Competitively Available Consumer Equipment For In-Home Conversion Of Digital Television Signals

As between analog conversion of DTV broadcasts before or after transmission to the home, only conversion after transmission can support the detail, clarity and viewing angles offered by DTV formats. Thus, in aid of the DTV transition, the Commission ought to encourage the broadest and most competitive market for in-home conversion of DTV signals.

The Commission took an enormous first step in its Report & Order in CS Docket 97-80. The Commission recognized that the "digital engine" in a cable Navigation Device is the same "engine" needed to convert a broadcast DTV signal for viewing. Allowing each

---

[10] *In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices*, CS Docket No. 97-80, *Report and Order*, 12 Comm. Reg. (P & F) 531, ¶ 14, 125 (Released June 24, 1998).

function to be offered competitively in standard consumer electronics devices is the best way to let consumers acquire them at little additional cost.

The Commission recognizes in this NPRM, however, that compatibility issues remain as to interfaces between conversion and display devices.[11] Some content providers have questioned whether they would wish to support high resolution analog and digital interfaces between such devices unless they can be assured that copy control technologies can be employed to protect certain (pay-per-view, video-on-demand, subscription) content. If lack of support were to result in an inability for Navigation Devices and other digital converters (*e.g.*, a module containing a tuner and digital decoder as part of an HDTV receiver) to send such HDTV content to high-definition displays, consumers would be poorly served. The Commission seeks comment as to how such issues can, and should, be resolved.[12]

Circuit City has these observations. First, this dilemma shows the wisdom of the Commission's approach to competitive availability of Navigation Devices, allowing all navigation features and functions to be built into receivers with no need to rely on an external interface. For example, certain DBS services, as to which receivers are already competitively available, will support built-in DBS tuners in the first generation of HDTV receivers.[13] The OpenCable standard, when available, also will support such an approach, in which a conditional access module, or "POD," can enable a receiver to act as a Navigation Device, without need for any interface between the conditional-access enabled device and the display. Hence, the copy control issue does not arise. The more quickly the OpenCable solution is

---

11 *Notice* ¶ 17-31.

12 *Id.*

13 *HDTV: Hitachi and Thomson to Jointly Develop HDTV*, EDGE Work-Group Computing Report, Dec. 22, 1997.

supported by availability of PODs from cable MSOs, the faster this solution will work for cable, as well as satellite, services.

Where the manufacturer's design approach contemplates a separate electronics module and display, the IEEE 1394 digital serial interface will be available. This interface will be subject to copy control techniques accepted by content providers. However, while valuable, the "1394" interface does not appear to offer a complete solution. It always requires an MPEG decoder in the display – even when the manufacturer otherwise would choose to put all electronics in the navigation box. Accordingly, some HDTV manufacturers may not wish to offer a 1394 interface. Moreover, though secure 1394 interface technology is now available for license, it was not ready in time for implementation in the first generation of HDTV receivers, which are about to go on sale.[14]

These factors make it vital to the success of DTV that high-bandwidth component analog interfaces, such as RGB and Y,P_R,P_B (and future parallel digital broadband interfaces) be supported. Some manufacturers may also wish to employ other digital interfaces, such as 8VSB.

Unfortunately, unlike composite analog interfaces (commonly protected by Macrovision) and the 1394 interface, which is subject to digital re-encryption technology, these interfaces do not appear to be subject to any interface-specific techniques for implementing a copy control regime. It appears that the only feasible means of marking and enforcing copy control status will be through a data hiding, or "watermark" technique.

The good news about watermarking is that a subgroup of the multi-industry Copy

---

[14] Junko Yoshida, *Cable Not Ready for Digital TV*, TechWeb News, Sept. 1, 1998; Mass Media Section, Communications Daily, Aug. 28, 1998.

Protection Technical Working Group ("CPTWG") is testing several watermarking systems, each of which seems potentially effective without adding any appreciable distortion to pictures. The bad news is that such techniques, which do not rely on encryption, ordinarily will also be ignored by recording devices. Therefore, unless a future HDTV recorder is by some means required to look for such watermarks, increment their status indication as necessary when making a copy, and respond to no-copy indications, content providers are unlikely to regard such a system as providing meaningful protection. They may not be inclined to support their content flowing over such interfaces.

Circuit City regards the lack of an available technical or legal means of mandating responses, in future recording devices, to specific watermarking systems as an issue relevant to the Commission's inquiry. It does not, however, view regulation of the capabilities of such recorders as within the Commission's purview. Congress has struggled with the underlying copyright law issues, with only carefully incremental results, for decades. These issues involve judgments as to the application of copyright principles and technology policy to consumer electronics devices that have never been regulated, as to copying capacity, by the Commission or anyone else.

In Circuit City's view, the proper Commission role as to the question of broadband interfaces between consumer electronics devices is to report to the Congress, as soon as possible, findings as to the nature of the problem and potential solutions. The Commission has been gathering information on this subject for some time so it ought to be able to make a report before resolving the overall "must carry" question.

We believe that any list of potential solutions will be short. There seems to be no alternative to Congress inviting the private sector to identify a consensus watermarking

technology and requiring that new generations of recording devices must read and respond to such watermarkings in appropriate ways,[15] subject to carefully balanced rules as to the sorts of media on which no-copy and generational copying outcomes may and may not be applied.[16]

IV. Digital Television Broadcast Signals Must Be Carried On A Cable System's Basic Service Tier

In its *Notice*, the Commission seeks comment on which tier a broadcaster's digital signal must be carried.[17] Regardless of whether a broadcaster elects must-carry or retransmission consent for its digital transmissions, Circuit City believes it is legally mandated for cable system operators to carry such signals on their basic service tier. Moreover, the rapid conversion to digital television depends on the Commission complying with this legal mandate.

Section 614 states "each cable operator shall carry ... the signals of local commercial television stations ... [and] signals carried in fulfillment of the requirement of this section shall be provided to every subscriber of a cable system."[18] By definition, "basic cable service means any service tier which includes the retransmission of local television broadcast signals."[19] The Commission has previously interpreted these provisions as requiring that "any

---

15 As a consumer electronics and computer retailer, Circuit City believes that the Supreme Court decision in *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984) has been an important factor in the acceptance of new technologies by consumers, to the benefit of technology and entertainment industries alike. The balance as to which media may be protected by "copy control" technologies, and to what extent, in recent years has been subject to negotiation among these industries as a matter of policy and proposed legislation. The result thus far has been to protect the accustomed practices of consumers, while recognizing that some forms of content, based on their status in the distribution chain, may reasonably be protected without interfering with customary consumer practice.

16 This is a decision area as to which the Congress can make legislative judgments based on its Constitutional power to enact copyright legislation and its power to regulate commerce, but as to which the Commission would be particularly ill-suited.

17 *Notice* ¶ 75.

18 47 U.S.C. § 534(a) & (b)(7).

19 47 U.S.C. § 522(2).

domestic television broadcast signal carried by a cable operator must be placed on the basic tier, whether the channel is must-carried or carried pursuant to retransmission consent.... There are no exceptions for signals transmitted pursuant to retransmission consent or for additional broadcast signals carried beyond the operator's must-carry requirements."[20] Moreover, the Commission has found that Congress intended that there be only one basic tier.[21]

The introduction of digital television has done nothing to justify changing these findings. Following the Commission's precedent and the proper interpretation of these statutory provisions, all of a broadcaster's digital transmissions must be carried on a cable system's basic service tier.

Circuit City's position is also supported by sound policy concerns. Consumers should not have to spend any additional money to receive digital television from their cable system operator. Under current law and cable system practices, cable service subscribers must subscribe to the basic service tier in order to receive any other cable services.[22] Thus, if cable system operators were allowed to carry digital signals on any other service tier, including a cable programming services tier, subscribers would not be able to limit their service subscription to only digital broadcast programming. Instead, they would be required to first subscribe to basic cable and then to whatever additional programming services the cable system operator might bundle with the digital broadcast service. This approach is neither efficient nor pro-consumer.

---

20 *In the Matter of Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992*, MM Docket No. 92-266, *Report and Order and Further Notice of Proposed Rulemaking*, 8 FCC Rcd 5631, ¶ 157 (Released May 3, 1993).

21 *Id.* ¶ 169.

22 47 U.S.C. § 543(b)(7).

As Circuit City has already demonstrated, consumers must have the opportunity to experience the high quality display that DTV in general, and HDTV in particular, bring to broadcast programming. Because existing MVPD customers will continue to rely on their service providers for receipt of DTV broadcasts, it is critical that these broadcasts are available to consumers at the basic service tier.

V. The Unaltered Carriage Of Broadcast Digital Television Signals By Cable System Operators Will Not Cause The Cable Industry To Bear A Disproportionate Share Of The Responsibilities Associated With The Introduction Of Digital Television

The Commission requests comment on several related issues involving the costs that will be incurred in the delivery of digital broadcast signals to cable subscribers. More specifically, the Commission seeks comment regarding the costs involved in delivering digital broadcast television to cable subscribers and the relation of those costs, and their recovery, to existing cable rate levels.[23] In addition, the Commission requests comment on the related issue of which entities should bear the "costs of carriage" of digital television signals – the broadcaster seeking carriage or the cable operator providing carriage.[24]

In this regard, it has been common for cable operators to argue that to the extent they are required to carry any digital broadcast services, they should not be required to incur the costs of ensuring technical compatibility with their systems. Yet all of the participants in the emerging digital television industry – including broadcasters, programmers, and equipment manufactures—are incurring extensive costs in ensuring that digital broadcast television signals are brought to American homes. The Commission, therefore, should not entertain

---

[23] *Notice* ¶ 92.
[24] *Notice* ¶ 93.

complaints of the cable industry that costs of carrying digital broadcast signals will be too great for them to bear alone. Rather, as evidenced by the costs incurred by other participants in the conversion to digital television – and regardless of the particular carriage rules, if any, adopted by the Commission – cable operators will not assume a disproportionate burden by having to make technical improvements in order to bring digital broadcast signals into their subscribers' homes.

Furthermore, much of the investment in these technical improvements already has been made. Significant investment in digital cable technologies began years ago and continues to accelerate each year, calling into question any claim that the cost of carriage will be too burdensome if imposed on cable operators alone. Indeed, the ongoing transformation of cable systems into digital systems should ensure that the incremental costs of ensuring that those systems can carry digital broadcast television remain low. Finally, to the extent that cable operators are investing in upgrades to expand their channel capacity in order to carry their own programming, they should similarly be required to invest in upgrades necessary to carry digital television signals. Otherwise, their subscribers, who are paying for the system's digital upgrades, will pay more in cable rates, while receiving less programming options as digital television programming becomes widely available.

Each of the industries participating in the development of DTV is making extensive investments in the transition to the new technology. Broadcasters are expected to spend more than $16 billion on new digital transmission and production equipment before the mandated transition to DTV is complete.[25] Networks and individual stations are making initial

---

[25] *Free, Over-the-Air Digital Television Broadcasters Deliver Digital On-Time*, PR Newswire, Oct. 6, 1998.

expenditures on digital equipment to the tune of $500,000 to $1 million per station.[26] Additionally, it has become necessary for public broadcasters to make unprecedented investments to convert to digital technology, with estimates for public television transition placed at $1.7 billion.[27]

Cable's investment in technical improvements to their systems to permit the carriage of digital television signals to subscribers' homes is no more daunting. Even in the case of cable systems that have not yet implemented digital technologies, the cable operators' investment in technical modifications to enable them to deliver digital broadcast signals to subscribers is correctly borne by the operators themselves. This result will not cause cable operators to assume a disproportionate share of the costs of converting to DTV; shifting these costs, however, will unnecessarily impose that result on broadcasters. Accordingly, efforts to force broadcasters to bear the cost of a cable operator's carriage of a digital signal should be rejected. Broadcasters, programmers, manufacturers, and cable operators have made and continue to make enormous investments in digital technologies, and no single entity should be permitted to pass its costs on to another.

Moreover, in an effort to offer their subscribers a broader variety of services and programming options, the cable industry has already made significant investments in digital technologies. Cable operators throughout the country have been rapidly upgrading their systems in order to offer digital cable services. These system upgrades involve the installation of digital headends, the deployment of digital compression technology and the

---

[26] Mike Boyer, *Supplier Rushes to Meet Digital TV*, Cincinnati Enquirer, Sept. 16, 1998, at B10.

[27] *See* Prepared Statement of Beth Courtney, Before the House Commerce Committee, Telecommunications, Trade, and Consumer Protection Subcommittee, Oct. 5, 1998.

provision of digital set-top boxes.[28] Indeed, the cable industry urges reconsideration in CS Docket 97-80 to perpetuate its right to offer unique digital converter boxes from MSO inventories rather than relying on competitive suppliers. This is not consistent with any shortage of capital.

Furthermore, the Commission's initial Notice of Inquiry regarding digital television appeared in 1987,[29] and, since that time, the broadcasting and cable industries have been actively involved in a multitude of proceedings before the Commission and Congress regarding the deployment of the technology. Cable operators have been aware for years of the technical compatibility issues that they would face in the digital arena. Their much-hailed expansion of digital capability in recent years – through, for instance, the deployment of digital headends and digital set-top boxes – should lessen the impact of any remaining compatibility issues regarding carriage of digital broadcast signals. Indeed, armed with the knowledge that it would soon be necessary for cable systems to, in some manner, carry digital broadcast signals, as discussed above, cable operators have made enormous investments in recent years in both cable plant and in digital cable technologies. Knowing that the

---

[28] Time Warner began its upgrade in 1996 with a $4 billion program that is expected to be complete by the close of the year 2000. *See* Prepared Testimony of Joseph J. Collins, Before the Senate Committee on Commerce, Science, and Transportation, July 8, 1998. Fiber additions to cable plant, expansion of the system's bandwidth, and utilization of digital compression technologies provide the system with expanded channel capacity, high-speed internet capability, and "digital-ready" cable plant. *Id.* The company expects seventy percent of its systems' upgrades to be complete by the end of 1998. *Id.* Tele-Communications, Inc. ("TCI") has undertaken a similar nationwide system upgrade to enable it to deliver two-way services and high-speed internet service and to expand the number of channels offered to subscribers. *See* Prepared Testimony of Leo J. Hindery, Jr., Before the Senate Judiciary Committee, Antitrust, Business Rights, and Competition Subcommittee, Oct. 8, 1997. By the spring of 1998, TCI's expansion permitted it to offer digital services to 92 percent of its 14 million subscribers. *See More on TCI Digital*, Media Daily, Mar. 26, 1998; *TCI Digital Does 2%,* Media Daily, Mar. 5, 1998. Cox Communications launched its first digital cable service in October 1997, and Comcast Corporation began offering digital services in April 1997. *See Cox Cable Marks First Digital Launch*, Media Daily, Oct. 31, 1997.

[29] *See In the Matter of Advanced Television Systems*, MM Docket No. 87-268, *Notice of Inquiry*, 2 FCC Rcd 5125 (1987).

introduction of digital television transmission was fast-approaching, these cable operators should have made every effort to ensure that any remaining technical improvements necessary for carriage of digital television would be minimal and in the nature of augmentation rather than transformation.

Yet, cable operators continue to lament the costs of carrying digital broadcast signals. For instance, the *Notice* references TCI's enumeration of the costs cable operators will be forced to incur should any carriage requirement be imposed upon them. These costs would fund any technical modifications necessary to enable cable systems to deliver digital broadcast television to their subscribers. As TCI noted to the Commission, these costs include headend equipment for the conversion of broadcasters' digital transmissions to analog; headend equipment to demodulate broadcast material and remodulate it according to the system's technical requirements; headend equipment to separate the broadcaster's primary video service from other digital feeds; and digital set-top boxes in the consumer's home.[30] What TCI's list of costs does not account for, however, are which of these improvements remain necessary following the company's widespread deployment of digital technology throughout its system. And, as we note above, full support of the Commission's determination in CS Docket 97-80 would minimize the investment in set-top devices.

The costs that cable operators will incur in order to deliver digital television signals to their subscribers should be viewed as the incremental costs *above and beyond* the costs already incurred to upgrade systems to provide digital cable. Those investments have been and continue to be made for many reasons, many of which are independent of the transition to

---

[30] *Notice* ¶ 93 & n.198.

DTV.[31] The incremental costs of augmenting new digital cable systems to enable them to carry digital broadcast television signals will not be disproportionately burdensome to cable operators and, therefore, should not be borne by entities other than cable operators.

Finally, the largest cable systems own significant equity in many of their popular programming channels, and these program subsidiaries generate higher profits for operators in both subscriber fees and advertising. Subscribers, therefore, effectively subsidize these high programming overheads, as well as the investments into digital upgrades that expand channel capacity and permit MSOs to carry even more of their own programming. If these operators do not augment or retrofit their digital cable systems to ensure that they are capable of carrying digital broadcast television signals, then subscribers – despite paying for ongoing digital upgrades to the cable systems – will be deprived of the expanded choice of programming offered though DTV.

VI. Conclusion

If the Commission takes into account the fact that most consumers rely on cable operators to process and deliver broadcast signals, the analog terrestrial broadcast spectrum can be returned for auction by 2006. This elevates the responsibilities of cable operators with respect to DTV signals.

Consumers should have access to DTV signals using competitively available, off-the-shelf equipment. The quality of such signals should not be altered by intermediaries in the

[31] For instance, cable systems have completed upgrades in cable plant and headend equipment in order to provide high speed internet-related services via cable modems and to relieve long-standing channel lock problems.

delivery chain and Navigation Devices should make them available via both composite and component analog interfaces.

In order for all consumers of cable service to be able to enjoy the benefits of digital television, the Commission should adopt DTV must carry rules that ensure that all DTV broadcast signals are carried in the format delivered by the broadcaster, are carried on the basic service tier at no additional charge to cable subscribers, and can be accessed without the need for purchasing or leasing specialized equipment or services from the cable system operator.

Respectfully submitted,

CIRCUIT CITY STORES, INC.

Alan McCollough
President and COO

W. Stephen Cannon
Sr. Vice President and General Counsel
Circuit City Stores, Inc.
9950 Mayland Drive
Richmond, VA 23233
(804)527-4014

Of Counsel

Robert S. Schwartz
Catherine M. Krupka
Julie Y. Patterson
McDermott, Will & Emery
600 13th Street, N.W.
Washington, D.C. 20005
(202)756-8081

October 13, 1998

CERTIFICATE OF SERVICE

I, Jane Aguilard, hereby certify that on the 13th day of October, 1998, copies of the foregoing Comments of Circuit City Stores, Inc. were served by hand upon the parties listed below:

Ms. Magalie R. Salas, Secretary
(Original and four copies)
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20554

Commissioner Susan Ness
Federal Communications Commission
1919 M Street, N.W.
Room No. 832
Washington, DC 20554

Chairman William E. Kennard
Federal Communications Commission
1919 M Street, N.W.
Room No. 814
Washington, DC 20554

Commissioner Michael Powell
Federal Communications Commission
1919 M Street, N.W.
Room No. 844
Washington, DC 20554

Commissioner Harold Furchtgott-Roth
Federal Communications Commission
1919 M Street, N.W.
Room No. 802
Washington, DC 20554

Commissioner Gloria Triastani
Federal Communications Commission
1919 M Street, N.W.
Room No. 826
Washington, DC 20554

Jane Aguilard